

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number
WO 2005/017640 A3

(51) International Patent Classification?: **H04Q 7/36**, 7/34, H04B 7/005, H04L 1/20, 27/32, H04M 11/06

(74) Agent: DAINES, Jeffrey; c/o Soma Networks, Inc., 312 Adelaide Street West, Suite 600, Toronto, Ontario M5V 1R2 (CA).

(21) International Application Number:

PCT/CA2004/001459

(22) International Filing Date: 12 August 2004 (12.08.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2,437,927 14 August 2003 (14.08.2003) CA

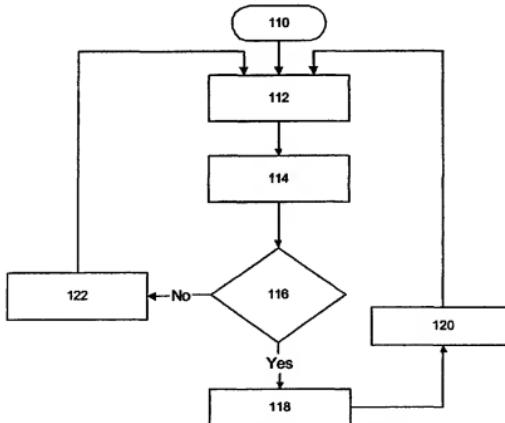
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, CZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(71) Applicant (for all designated States except US): SOMA NETWORKS, INC. [US/US]; Legal Department, 185 Berry Street, Suite 2000, San Francisco, CA 94107 (US).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPo (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

{Continued on next page}

(54) Title: ADAPTIVE CODING FOR A SHARED DATA COMMUNICATION CHANNEL



(57) Abstract: A method, system and apparatus for determining a block format to be used to transmit a block of data over a channel to a receiver by collecting a series of reception-quality measurements, determining the rate of change of the reception-quality or the rate at which retransmission requests are being made, and, depending upon the magnitude of the rate of change or the rate of retransmission requests, either: averaging the lowest portion of the reception-quality measurements during the time-series and determining the block format based upon the average; or determining the block format based upon the most recent reception-quality measurements.

WO 2005/017640 A3

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:

2 June 2005

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CA2004/001459

A. CLASSIFICATION OF SUBJECT MATTER

IPC¹: H04Q-7/36, H04Q-7/34, H04B-7/005, H04L-1/20, H04L-27/32, H04M-11/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC²: H04Q, H04L, H04M, H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)

Delphion, Canadian database, Esp@cnet, IEEEExplore, internet search: adaptive, link, coding, reception, quality, fading, channel, wireless, measurement, average, quantization, transmit control bits, and equivalent terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No(s).
X	US5764699 9 June 1998 (09-06-1998) Needham et al.	11, 15, 25
Y	*whole document	1-10, 12-14, 16-24, 26-40
Y	EP0964540 A2 15 December 1999 (15-12-1999) Anandakumar et al. *abstract *paragraphs [0011], [0015], [0017], [0023]	10, 12, 19, 22, 28, 34, 40
A	US6215827 10 April 2001 (10-04-2001) Balachandran et al. abstract *col 7 lines 54-65 *col 15 lines 29-64	1-40
A	US2003/0126536 A1 3 July 2003 (03-07-2003) Gollamudi et al. *whole document	1-40

[] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

- * Special categories of cited documents :
 - "A" document defining the general state of the art which is not considered to be of particular relevance
 - "E" document of application or patent but published on or after the international filing date
 - "L" document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
 - "O" document relating to an oral disclosure, use, exhibition or other means
 - "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other specific documents, such combination being obvious to a person skilled in the art
- "Z" document member of the same patent family

Date of the actual completion of the international search

21 March 2005 (21-03-2005)

Date of mailing of the international search report

07 April 2005 (07-04-2005)

Name and mailing address of the ISA/CA
 Canadian Intellectual Property Office
 Place du Portage I, C114 - 1st Floor, Box PCT
 59 Victoria Street
 Gatineau, Quebec K1A 0C9

Authorized officer
 Andrew Strong (819) 994-8691

Facsimile No: 001(819)953-2476

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/CA2004/001459

Patent Document Cited in Search Report	Publication Date	Patent Family Member(s)	Publication Date
US5764699	09-06-1998	none	
EP0964540	15-12-1999	US6421527 B1	16-07-2002
US6215827	10-04-2001	AU2121799 A BR9915302 A CA2244428 A1 CA2263060 A1 CN1154391C C EP0899906 A2 EP0944201 A2 JP3441379B2 JP11313040 A US6108374 A	30-09-1999 24-07-2001 24-02-1999 19-09-1999 16-06-2004 03-03-1999 22-09-1999 02-09-2003 09-11-1999 22-08-2000
US2003126536	03-07-2003	none	